

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F. Larsen

2004

Nebraska Summary: S461 Case-IH JX75

Nebraska Tractor Test Laboratory

University of Nebraska-Lincoln, tractortestlab@unl.edu

Follow this and additional works at: <https://digitalcommons.unl.edu/tractormuseumlit>

 Part of the [Energy Systems Commons](#), [History of Science, Technology, and Medicine Commons](#), [Other Mechanical Engineering Commons](#), [Physical Sciences and Mathematics Commons](#), [Science and Mathematics Education Commons](#), and the [United States History Commons](#)

Laboratory, Nebraska Tractor Test, "Nebraska Summary: S461 Case-IH JX75" (2004). *Nebraska Tractor Tests*. 2877.

<https://digitalcommons.unl.edu/tractormuseumlit/2877>

This Article is brought to you for free and open access by the Tractor Test and Power Museum, The Lester F. Larsen at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Nebraska Tractor Tests by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

SUMMARY OF OECD TESTS 2174 & 2175—NEBRASKA SUMMARY 461

CASE IH JX 75 DIESEL

12 SPEED

Chassis Serial numbers HFJ013287 and higher

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Mean Atmospheric Conditions
---------------------	--------------------------------	-----------------	-----------------------	-----------------------	--------------------------------

MAXIMUM POWER AND FUEL CONSUMPTION

Rated Engine Speed (PTO speed-614 rpm)					
64.2 (47.9)	2500	4.15 (15.72)	0.450 (0.274)	15.48 (3.05)	
Standard Power Take-off Speed (540 rpm)					
63.4 (47.3)	2200	3.84 (14.54)	0.422 (0.257)	16.50 (3.25)	

VARYING POWER AND FUEL CONSUMPTION

64.2 (47.9)	2500	4.15 (15.72)	0.450 (0.274)	15.48 (3.05)	Air temperature
56.5 (42.1)	2584	3.69 (13.98)	0.456 (0.277)	15.29 (3.01)	81°F (27°C)
43.0 (32.1)	2624	3.04 (11.50)	0.493 (0.300)	14.17 (2.79)	Relative humidity
29.1 (21.7)	2664	2.45 (9.29)	0.587 (0.357)	11.88 (2.34)	42%
14.9 (11.1)	2724	1.67 (6.30)	0.780 (0.474)	8.94 (1.76)	Barometer
--	2750	1.21 (4.58)	--	--	27.2" Hg (92.1 kPa)

Maximum Torque - 153.3 lb.-ft. (250.5 Nm) at 1300 rpm

Maximum Torque Rise - 36.7%

Torque rise at 2000 engine rpm - 20%

DRAWBAR PERFORMANCE (Unballasted-Front Drive Engaged) FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Maximum Power—8th (III-1) Gear									
51.8 (38.6)	3305 (14.71)	5.87 (9.45)	2500	4.4	0.563 (0.343)	12.37 (2.44)	167 (75)	73 (23)	27.2 (92.1)
75% of Pull at Maximum Power—8th (III-1) Gear									
40.9 (30.5)	2480 (11.03)	6.18 (9.95)	2587	2.8	0.647 (0.393)	10.77 (2.12)	167 (75)	73 (23)	27.2 (92.1)
50% of Pull at Maximum Power—8th (III-1) Gear									
28.2 (21.0)	1655 (7.36)	6.39 (10.28)	2627	1.1	0.743 (0.452)	9.38 (1.85)	167 (75)	73 (23)	27.2 (92.1)
75% of Pull at Reduced Engine Speed—9th (II-4) Gear									
40.6 (30.3)	2480 (11.03)	6.15 (9.89)	2018	2.8	0.565 (0.344)	12.33 (2.43)	167 (75)	73 (23)	27.2 (92.1)
50% of Pull at Reduced Engine Speed—9th (II-4) Gear									
28.3 (21.1)	1660 (7.39)	6.38 (10.26)	2055	1.0	0.597 (0.363)	11.67 (2.30)	167 (75)	73 (23)	27.2 (92.1)

Locations of tests: DAEMTC (The Directorate of Agricultural Equipment and Machinery Testing Centre) Ankara, Turkey and CNH America LLC Burr Ridge, IL, USA

Dates of Test: May - June, 2004

Manufacturer: CNH America LLC, 700 State St. Racine, WI. 53404 USA

FUEL and OIL: Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.837 **Fuel weight** 6.97 lbs/gal (0.835 kg/l) **Oil** SAE 20W-50 **API service classification** DM/12 **Transmission and hydraulic lubricant** BP Terrac Tractan 8 fluid **Front axle lubricant** BP Terrac Tractan 8 fluid

ENGINE: Make Iveco Diesel **Type** four cylinder vertical **Serial No.** *639-998556* **Crankshaft** lengthwise **Rated engine speed** 2500 **Bore and stroke** 4.094" x 4.528" (104.0 mm x 115.0 mm) **Compression ratio** 18.0 to 1 **Displacement** 238 cu in (3908 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** paper element **Oil filter** two cartridges **Fuel filter** one paper element **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat

CHASSIS: **Type** 2WD & front wheel assist **Serial No.** 2WD-HFD018111, FWA-HFD018116 **Tread width** rear 59.6" (1515 mm) to 79.3" (2015 mm) front 2WD-54.1" (1375 mm) to 69.9" (1775 mm) FWA-60.2" (1530 mm) to 77.0" (1955 mm) **Wheel base** 2WD-90.4" (2295 mm), FWA-88.2" (2240 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph (km/h)** first 1.10 (1.77) second 1.70 (2.73) third 2.31 (3.71) fourth 2.57 (4.14) fifth 3.31 (5.32) sixth 3.96 (6.38) seventh 5.39 (8.67) eighth 6.05 (9.74) ninth 7.72 (12.42) tenth 9.33 (15.01) eleventh 12.69 (20.42) twelfth 18.18 (29.25) reverse 1.08 (1.74), 1.67 (2.68), 2.26 (3.64), 2.52 (4.06), 3.24 (5.21), 3.88 (6.25), 5.28 (8.50), 5.93 (9.55), 7.57 (12.18), 9.15 (14.72), 12.43 (20.01), 17.82 (28.67) **Clutch** dual dry disc operated by foot pedal **Brakes** wet disc operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 2200 engine rpm and 1000 rpm at 2382 engine rpm **Unladen tractor mass** 2WD - 6910 lb (3135 kg), FWA - 7290 lb (3307 kg)

DRAWBAR PERFORMANCE
(Unballasted – Front Drive Engaged)
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel lb/hp.hr (kg/kW.h)	Consumption Hp.hr/gal (kW.h/l)	Temp.°F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
4th (II-1) Gear									
38.1 (28.4)	6190 (27.54)	2.31 (3.71)	2597	15.0	0.673 (0.409)	10.36 (2.04)	172 (78)	77 (25)	27.2 (92.1)
5th (I-4) Gear									
46.3 (34.5)	5855 (26.05)	2.96 (4.77)	2550	13.4	0.627 (0.381)	11.12 (2.19)	172 (78)	77 (25)	27.2 (92.1)
6th (II-2) Gear									
48.4 (36.1)	5075 (22.58)	3.58 (5.75)	2500	11.1	0.604 (0.367)	11.52 (2.27)	178 (81)	75 (24)	27.2 (92.1)
7th (II-3) Gear									
50.4 (37.6)	3655 (16.25)	5.17 (8.32)	2502	5.5	0.582 (0.354)	11.98 (2.36)	176 (80)	75 (24)	27.2 (92.1)
8th (III-1) Gear									
51.8 (38.6)	3305 (14.71)	5.87 (9.45)	2500	4.4	0.563 (0.343)	12.37 (2.44)	176 (80)	75 (24)	27.2 (92.1)
9th (II-4) Gear									
48.9 (36.4)	2395 (10.65)	7.65 (12.32)	2500	2.3	0.595 (0.362)	11.72 (2.31)	176 (80)	75 (24)	27.2 (92.1)
10th (III-2) Gear									
48.0 (35.8)	1945 (8.64)	9.26 (14.91)	2499	2.2	0.605 (0.368)	11.52 (2.27)	176 (80)	75 (24)	27.2 (92.1)

TRACTOR SOUND LEVEL WITHOUT CAB	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
At no load in 7th(II-3) Gear	85.9	85.6
Bystander	–	–

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

NOTE 1: The PTO and drawbar results shown on this report are from tests conducted on the New Holland TD 80D.

NOTE 2: The performance data on this summary applies to tractor chassis serial numbers HFJ013287 and higher.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. This tractor did not meet the manufacturer's claim of 3 point lift capacity of 5950 lbs (2700 kg). The performance results on this summary were taken from OECD tests conducted under the Code II Test Code procedure.

We, the undersigned, certify that this is a true summary of data from OECD Reports No. **2174 & 2175**, Nebraska Summary 461, April 1, 2005.

Leonard L. Bashford
Director

M.F. Kocher
V.I. Adamchuk
W.P. Campbell
Board of Tractor Test Engineers

TIRES AND WEIGHT

Rear tires - No., size, ply & psi(kPa)
Front tires - No., size, ply & psi(kPa)
Height of Drawbar
Static Weight with operator-Rear
- Front
- Total

Tested Without Ballast

Front Wheel Assist

Two 16.9R34;*, 25(170)
Two 13.6R24;*, 23(160)
15.2 in (385 mm)
4470 lb (2028 kg)
2985 lb (1354 kg)
7455 lb (3382 kg)

2WD

Two 16.9R34;*, 25(170)
Two 9.00-16;10;56 (390)
14.8 in (375 mm)
4565 lb (2070 kg)
2525 lb (1145 kg)
7090 lb (3215 kg)

DRAWBAR PERFORMANCE
(Unballasted - 2WD)
FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel lb/hp.hr (kg/kW.h)	Consumption Hp.hr/gal (kW.h/l)	Temp. °F cool- ing med	°C Air dry bulb	Barom. inch Hg (kPa)
Maximum Power—8th(III-1) Gear									
49.1 (36.6)	3275 (14.56)	5.63 (9.06)	2500	8.6	0.592 (0.360)	11.78 (2.32)	169 (76)	80 (27)	26.8 (90.8)
75% of Pull at Maximum Power—8th(III-1) Gear									
38.2 (28.5)	2455 (10.92)	5.83 (9.39)	2532	6.4	0.697 (0.424)	10.00 (1.97)	169 (76)	80 (27)	26.8 (90.8)
50% of Pull at Maximum Power—8th(III-1) Gear									
26.7 (19.9)	1635 (7.28)	6.12 (9.85)	2582	3.7	0.809 (0.492)	8.61 (1.70)	169 (76)	80 (27)	26.8 (90.8)
75% of Pull at Reduced Engine Speed—9th(II-4) Gear									
38.2 (28.5)	2455 (10.92)	5.83 (9.39)	1986	6.4	0.608 (0.370)	11.46 (2.26)	169 (76)	80 (27)	26.8 (90.8)
50% of Pull at Reduced Engine Speed—9th(II-4) Gear									
26.6 (19.9)	1635 (7.28)	6.10 (9.82)	2016	3.6	0.686 (0.418)	10.15 (2.00)	169 (76)	80 (27)	26.8 (90.8)
MAXIMUM POWER IN SELECTED GEARS									
5th(I-4) Gear									
36.3 (27.1)	4670 (20.78)	2.91 (4.69)	2549	15.0	0.715 (0.435)	9.75 (1.92)	169 (76)	75 (24)	26.9 (91.2)
6th(II-2) Gear									
43.1 (32.2)	4620 (20.56)	3.50 (5.63)	2534	14.3	0.657 (0.400)	10.61 (2.09)	176 (80)	77 (25)	26.9 (91.2)
7th(II-3) Gear									
47.6 (35.5)	3650 (16.23)	4.89 (7.88)	2500	10.6	0.603 (0.367)	11.56 (2.28)	176 (80)	77 (25)	26.9 (91.2)
8th(III-1) Gear									
49.1 (36.6)	3275 (14.56)	5.63 (9.06)	2500	8.6	0.592 (0.360)	11.78 (2.32)	179 (82)	77 (25)	26.9 (91.2)
9th(II-4) Gear									
46.6 (34.7)	2365 (10.52)	7.38 (11.88)	2505	6.1	0.621 (0.378)	11.22 (2.21)	179 (82)	77 (25)	26.9 (91.2)
10th(III-2) Gear									
44.9 (33.5)	1855 (8.25)	9.07 (14.60)	2505	4.6	0.633 (0.385)	11.01 (2.17)	179 (82)	77 (25)	26.9 (91.2)

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: II

Quick Attach: none

Maximum Force Exerted Through Whole Range: 3235 lbs (14.4 kN)

- i) Opening pressure of relief valve: NA
- Sustained pressure of the open relief valve: 2540 psi (175 bar)
- ii) Pump delivery rate at minimum pressure and rated engine speed: 15.3 GPM (57.8 l/min)
- iii) Pump delivery rate at maximum hydraulic power: 14.5 GPM (54.8 l/min)
- Delivery pressure: 1740 psi (120 bar)
- Power: 14.7 HP (11.0 kW)

THREE POINT HITCH PERFORMANCE (SAE test)

Observed Maximum Pressure psi. (bar) 2580 (178)

Location: hydraulic manifold

Hydraulic oil temperature: °F (°C) 149 (65)

Location: hydraulic sump

Category: II

Quick attach: none

SAE Static Test—System pressure 2325 psi (160 Bar)

Hitch point distance to ground level in. (mm)	8.0 (203)	15.0 (380)	21.9 (556)	29.0 (737)	36.0 (914)
Lift force on frame lb	5652	5862	5487	5658	5002
" " " " " (kN)	(25.1)	(26.1)	(24.4)	(25.2)	(22.3)

HITCH DIMENSIONS AS TESTED—NO LOAD

	OECD test		SAE test	
	inch	mm	inch	mm
A	30.7	840	31.6	803
B	10.0	255	10.0	255
C	11.6	295	11.6	295
D	11.6	295	11.6	295
E	7.9	200	9.4	240
F	8.1	205	8.1	205
G	29.3	745	27.4	695
H	0.4	10	0.4	10
I	7.7	195	7.1	180
J	21.3	540	19.3	490
K	18.5	470	21.3	540
L	40.4	1027	40.4	1027
M	28.4	722	28.4	725
N	38.2	970	38.2	970
O	7.9	200	8.0	203
P	45.3	1150	39.4	1000
Q	37.8	960	33.6	854
R	25.4	645	25.7	654

